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# Solid Tumour Section

## Mini Review

# Soft Tissue Tumors: Soft Tissue Leiomyosarcoma

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## Identity

**Note**

Soft Tissue Leiomyosarcoma is a relatively rare malignant tumor. It may be difficult to be distinguished from gastrointestinal stromal tumors and Schwann cell neoplasms. To make a correct identification of soft tissue leiomyosarcoma, immunostaining with several smooth muscle differentiation markers (actin, calponin and desmin), and negative staining results with S100 (to rule out Schwann cell neoplasm), c-kit and CD34 (to rule out gastrointestinal stromal tumors) is needed.

## Clinics and pathology

**Clinics**

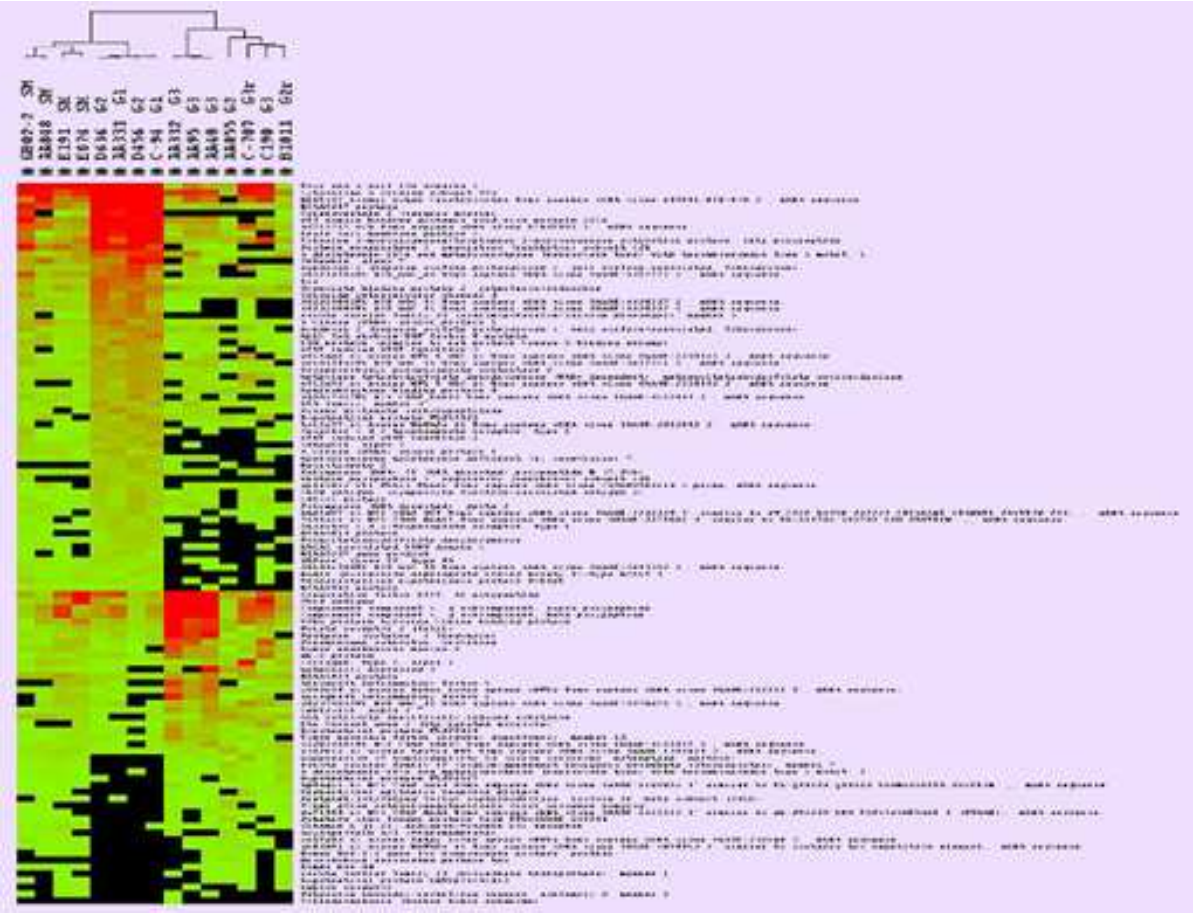
The annual new cases in the U.S. are over 6,000. The five year survival rate after diagnosis is about 50%.

**Genes**

Soft tissue leiomyosarcoma was classified based on salient gene expression characteristics. Three types of leiomyosarcoma were proposed: 1) "Simplification" of gene expression in leiomyosarcoma, characterized by dramatic down regulation of large number of genes; 2) "Inflammation related" gene expression, characterized by the prominent presence of lymphocyte specific genes in the analysis; and 3) "neural" gene expression, characterized by neuronal gene expression. Among these subtypes, simplification gene expression is associated with the poorest prognosis, while inflammation related one the best.

**Prognosis**

Local recurrent tumor, positive surgical margins, >50 years age, >20 mitoses per high power field are adversely associated with survival.



Phylogenetic tree of leimyosarcomas and normal smooth muscle. Expression levels of 92 cDNA sequences from table III through V were analyzed for 11 leiomyosarcoma tissues. Experiment cluster analysis was performed using Michael Eisen's cluster tool and tree view. Data input and normalization of individual experiments were performed in GeneSpring™ 4.2 before imported into cluster tool. Red indicates high expression level, while green for low, black for no expression. The cutoff expression level for non-expressor was set at 200 arbitary units. Pathological grade (G) for each tumor is indicated, so is metastasis (r) if it is present.

# References

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